The Aquarium Solution

Operating Instructions

Fluidised media reactor with hang on option

Model No. **FMR-75**

FMR-75

Please read these instructions before use and save for future reference

Description

The D-D FMR-75 fluidised reactor has been developed by D-D to give the ultimate low cost solution for fluidising a whole range of media's that are used on your marine or freshwater aquarium Including Rowaphos and H2Ocean Nutri-Fix NP Bio Pellets.

The unit can be installed free standing inside or outside a sump or hung on the outside of an aquarium or sump.

The FMR-75 is available as a reactor only package or reactor and feed pump. The included feed pump has been specified to fluidise Nutri-fix pellets and is quite powerful. For medias such as Rowaphos that require gentle fluidization we recommend purchasing the reactor only package and using a smaller pump of your choice.

Parts included

- FMR reactor including lid
- 1000l/h pump (included on FMR 75 KIT model only)
- 3 x lengths of clear plastic tubing
- 1 x Non return valve
- 1 x Flow adjustment tap
- 2 Grades of media sponges (1x coarse and 1x fine)
- 8 x cable ties for securing the pipework

Installation

First find a suitable position for the installation of the reactor. This can be hung on the inside or outside of an aquarium or sump. The two bolts on the lid will secure it in its final position.

IT IS BETTER THAT THE REACTOR IS POSITIONED ON THE INSIDE OF THE SUMP THEN ANY SMALL LEAKS OR WEAPING THAT MAY DEVELOP WILL BE CONTAINED WITHIN THE SYSTEM.

Three lengths of flexible tube are included to allow for different installation scenarios and also to offer some spare tube, as there is no need to use it all in one fitting. For most installations only two lengths of the tube will be used. All flexi tube connections should be cable tied securely into place and the elbows pushed tightly onto the reactor spigots.

The two 90 degree elbows are supplied loose and are a tight interference fit to the lid however once you have chosen the final installation position, and especially if the reactor is to be placed below the aquarium, we advise that the elbows are permanently bonded to the reactor spigots with aquarium silicone or ideally solvent weld adhesive. Once the elbows are bonded on you will no longer be able to turn them and so you must set them at the correct angle before gluing.

Installation continued

The flow adjustment tap should be installed on the 'IN' side of the reactor between the pump and reactor. If the tap is installed at the 'OUT' pipe of the reactor it will pressurise each joint and seal and increase the chances of it forming a leak. Install the flow adjustment tap as close to the pump as possible so that if the tap does start to leak under pressure then it simply runs back into the tank or sump.

The non-return valve should be installed at the 'OUT' side of the reactor. This valve prevents back syphoning of the reactor when the pump is turned off. If the reactor is hung on the side of an aquarium where the level in the reactor is level with the aquarium water level then there it is not necessary to install the valve, as the reactor cannot drain down.

The simplest way to install the non-return valve is simply to push it on the very end of the outflow pipe where it returns to the tank or sump. Ensure that it is fitted vertically for the ball to engage.

To identify the correct orientation of the valve simply blow down it as air will only be able to pass through the valve in one direction showing the way the valve should be installed to maintain water flow through the unit

Assembly and disassembly of the reactor

To open the reactor screw the lid anticlockwise until the lid can be removed. Observe that on the reactor side of the joint with the lid that there is a triple rubber seal, this seal must be in the correct position when the lid goes back on for the reactor to remain watertight. A little silicone grease will assist in repositioning this seal.

The reactor is designed so that the upper fluidising plate comes off with the lid so that additional media can be easily added. This upper diffuser plate is removable for cleaning and can assist reassembly of the reactor if fitted to the top of the centre tube, with any sponges, before screwing on the lid.

You will see that the central feed pipe and lower diffuser are also removable and are glued together as one single part. The two sponges that are filled can be easily cleaned and are available as a low cost replaceable spare part.

With the central tube and any lower sponge fitted, (if required), put one finger over the top of the tube and add the media to the correct level, this will vary depending on the media used. Take the upper diffuser plate and put the upper sponge, (if required), onto the plate spigot, below the perforated plate, before pushing onto the central tube.

Check the rubber seal is in position and fully inserted into the groove.

Screw the lid back onto the reactor. This should screw easily and any resistance to turning suggests that you have the lid cross-threaded and you should remove it and start again.

Feed pump

The flow rate required for the feed pump to supply the reactor will depend on the media being used and will vary from 500 lt/hr for Rowaphos, up to 1500 lt/hr for Nutri-fix Bio Pellets.

The pump supplied, as part of the FMR75 KIT, is primarily intended to fluidise bio pellets and may produce excess flow for fluidising small amounts of Rowaphos. If the pump is closed down too far with the inline tap it may cause the pump to hum as the restriction for correct fluidisation starts to stall the impeller. If this starts to happen we suggest fitting a T piece and additional valve, (not included), in the flexi pipe from the pump to divert excess flow away from the reactor, This should reduce humming to a minimum as the pump will still be able to pump without restriction.

For low flow installations we recommend using the standard FMR 75 and purchasing a smaller pump.

Tips

Over time or if over tightened, the lid may grip the triple seal O-ring making the reactor difficult to unscrew. To assist easy removal we advise that the triple seal and threads are lightly lubricated with Vaseline or food grade silicone grease before assembly.

The fine and coarse sponges included in the pack need to be fitted in an order or even omitted depending on the media used. Please see pictorial examples included for ideas, some experimentation may be required with certain media's.

If the media does not fluidise with the full flow rate through the reactor then please check that you have the feed and return pipes connected the correct way round. The feed must go into the spigot in the centre of the reactor lid.

If there is no flow through the reactor and the pump is running then check that the non-return valve is connected the correct way round to allow water to pass.

There is no requirement to fluidise Carbon; it is best set to not fluidise to prevent abrasion.

Installation options

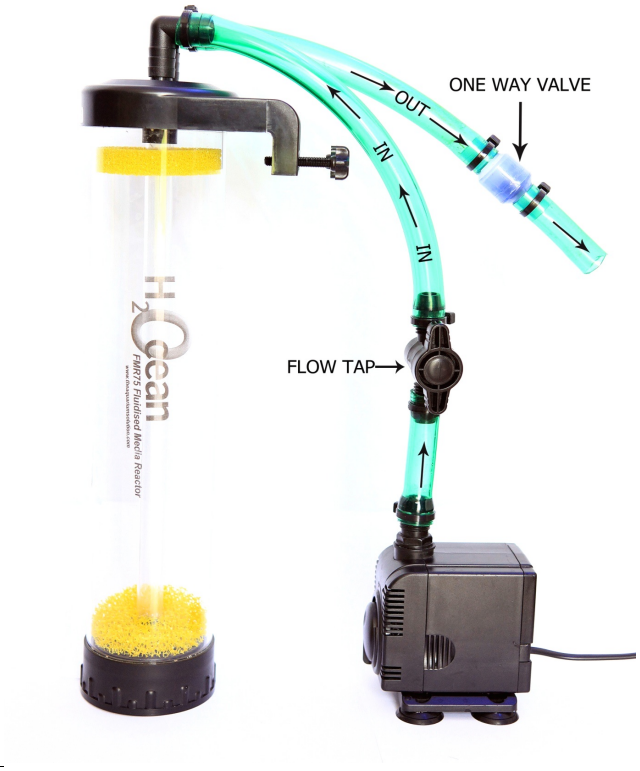
1 - No sponges fitted for most pellet systems including Nutri-Fix BIO Pellets
2 - Top fine sponge without lower sponge for Rowaphos
3 - Top fine/bottom coarse sponges for carbon and other medias

1.

2.

3.

Typical installation set up



Specifications

- 128mm x 94mm x 440mm (including fittings and lid)
- Reaction tube outer diameter - 80mm
- Tube height between upper/lower perforated plates - 340mm
- Can hang on glass up to 25mm
- Designed to be the correct height to hang on a 15" Sump (will stand inside smaller sumps or hang onto taller sumps).
- 16-22 mm flexible pipe size
- FMR pump output 1500 lt/hr

Suitable for

- Rowaphos or Phosphate Removers
- Nutri-fix Bio Pellets (Up to 700ml)
- Carbon
- Biological Sand as a fluidised sand filters

For further information please visit our website at www.theaquariumsolution.com